

# Review

## Assigned Work

p. 160#1, 2a, 3, 4, 7, 9

p. 274 #5, 7

p. 335 #7

p. 241 #19abe

p.185 #3b, 5, 9, 11ad, 12, 16

p. 304 #1a, 3, 5, 12, 15ac,

p. 361 #5, 7, 9, 11ae, 17

Apr 26-10:25 AM

## Fundamental Skills Review

Properties of Quadratics p.185 # 1bc, 3, 5

Modeling Quadratic Equations p.185 # 11

p.304 # 8, 9

Graphing Quadratic Relations

- table of values
- zeroes, y-int, vertex
- vertex & step pattern

Algebra of Quadratic Equations

- expand & simplify p.186 # 14ace, 15ab
- common factoring p.240 # 2ad
- factoring by decomposition p.240 # 6ad, 10, 16
- partial factoring p.305 # 15
- complete the square p.361 # 4
- choosing a strategy p.305 # 16

Solving Quadratic Equations p.361 # 1, 8

- by factoring
- by completing the square
- using quadratic formula
- discriminant p.262 # 11

Transformations of  $y = x^2$  p.304 # 3, 4, 5

Nov 30-9:34 PM

Vertex Form:  $y = a(x - h)^2 + k$

Vertex (h,k)

Vertical Scale: Step pattern for a

1, 3, 5  $\longrightarrow$   $1 \times a$ ,  $3 \times a$ ,  $5 \times a$

Direction of opening:

$a > 0$  UP

$a < 0$  DOWN

graph or sketch to determine the # of zeroes

Nov 17-7:32 PM

Discriminant:  $D = b^2 - 4ac$  (tells you the # of zeroes)

$D = 0 \longrightarrow$  1 real root

$D > 0 \longrightarrow$  2 real roots

$D < 0 \longrightarrow$  no real roots (no solution)

Nov 17-7:45 PM

Quadratic Formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

determine zeroes if:

- cannot factor
- numbers too complicated

Nov 17-7:49 PM

Standard Form:  $ax^2 + bx + c$

a: step pattern / opens up or down

c: y intercept

To change to factored form or to find the zeroes:

- Factor (sum and product)

To change to vertex form:

1. complete the square
2. partial factor
3.  $x = -b / 2a$

Nov 17-7:52 PM

Factored Form:  $y = a(x - s)(x - t)$

- zeroes at  $s$  and  $t$
- step pattern & opening from  $a$
- vertex

Axis of symmetry =  $(s + t) / 2$   
for  $y$  sub  $x$  in original equation

Example:  $y = 3(x-2)(x+6)$

Nov 17-8:00 PM

### Word Problems:

- Sketch
- **Identify the variables**
- **Create an equation (if not given)...**
  - using a relationship between the variables (constraint, Pythagorean theorem, etc.)
  - looking at what you need to find (area, revenue, etc.)
- **Identify the property of quadratics that you need**
  - maximum or minimum = vertex
  - "when it hits the ground" = zeros
  - "when the height is 10 m" = find  $x$  when  $y = 10$
  - "after 5 seconds" = find  $y$  when  $x = 5$
- **Go do the work!**

May 2-10:14 AM